

Madagascar Nickel Project Water Treatment Supplied by Aquatech

The Facility

Ambatovy, located in Madagascar, is a world-class, large tonnage nickel project that is positioned to be among the world's biggest lateritic nickel mines. It is a life-long project with an annual design capacity of 60,000 metric tons of nickel and 5,600 metric tons of cobalt. The site is located approximately 50 miles east of the capital of Madagascar, Antananarivo, and near the city of Moramanga. This project will consist of an open-pit mining operation and an ore preparation plant at the mine site. The slurried laterite ore will then be delivered via pipeline to a process plant and refinery located directly south of the Port of Toamasina.

Project Overview

Aquatech was awarded the contract from SNC-Lavalin Incorporated for supplying the Process Evaporator and Demineralized Water Treatment Plant portions of the Ambatovy Project. The contract is administered by SNC Lavalin, Inc. as agents for and on behalf of Dynatec Madagascar South Africa.

Aquatech implemented a unique horizontal spray film evaporator solution for the Nickel Sulfate concentration process.

The Solution

A single 1 x 100% system was designed for 130 Te/hr feed flow utilizing Aquatech Sprayfilm technology which offered the following benefits;

- Lower Power consumption and low life cycle costs
- Ability to clean both the inside and outside of the tube bundle
- Modular low profile design for ease of transport and installation

The scope of supply included the evaporator, condenser, pumps, tanks, duct and piping as well as a completely automated control system. The unique design allowed for a single super skid below the unit to house all the necessary pump and compressor systems for minimal site work.



PROJECT PROFILE SERIES #65

FEED WATER ANALYSIS

Major Ionic Constituents

Ions (g/l)	
Ni.....	64.6
Co.....	0.1
(NH ₄) ₂ SO ₄	0.6
H ₂ SO ₄	0.01
Cl ⁻	0.03

Temperature.....67°C
 Specific Gravity.....1.17

Projected Utilities

Steam	
Pressure, kpa abs.....	121
Temperature, °C.....	105
Usage, kg/h.....	43,300
Cooling Water	
Pressure, kPag.....	500
Temperature, In, °C.....	32
Temperature, Out, °C.....	42
Flow, m ³ /h.....	2,375
Power	
Voltage, v.....	480
KW	

PROCESS FLOW DIAGRAM, 130 Te/hr

